EPA New England
National Priorities List (NPL) Fact Sheet

Status: Previous Production

Last Released to Public: 10/30/2015

Map of Site:

Map in this site in Cleanups in My Community

Map of Site:

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT

Bedford, Massachusetts
Middlesex County

Street Address:	
Zip Code:	01730
Congressional District(s):	06
EPA ID #:	MA6170023570
Site ID #:	0102032
Site Aliases:	

Site Description

This page will automatically redirect to the site 's new Site Profile Page at www.epa.gov/superfund/nwirp
Please make a note.
www.epa.gov/superfund/nwirp

The Naval Weapons Industrial Reserve Plant (NWIRP) is a 46-acre facility that is part of a larger industrial complex located immediately north of Hanscom Air Force Base, which is also on the NPL. NWIRP is operated by Raytheon Co. and was established in 1952 when a missile and radar development laboratory was built. Then known as the Naval Industrial Research Aircraft Plant (NIRAP), the laboratory's mission was to provide facilities for research and development of radar, missile guidance systems, and related equipment. Flight test facilities were added on the southern portion of the site in 1959. Between 1959 and 1977, the Navy obtained about 43 additional acres from the Air Force. Buildings constructed during the past 25 years include large facility storage and government buildings near the northern property boundary, an Antenna Range Building, air conditioning and incineration facilities, and the Advanced Medium Range Air to Air Missile Development (AMRAD) Building. NWIRP currently is used for advanced technology research in weapons systems development. These activities include the design, fabrication, and testing of prototype equipment such as missile guidance and control systems. There are two primary operating areas at NWIRP: the Components Laboratory and the Flight Test Facility. Approximately 21 other buildings house various support activities related to the work at these two centers. Wastes generated at NWIRP include various volatile organic compounds (VOCs), photographic fixer, waste oil and coolants, lacquer thinner, unspecified solvents and thinners, Stoddard solvent, waste paint, and chromic, sulfuric, nitric, hydrochloric, and phosphoric acids. The Hartwell Road Well Field, part of the municipal water supply for the Town of Bedford, is located less than .5 miles from NWIRP. The three wells in this field were closed in 1984 after VOCs contamination was discovered. The Town of Bedford conducted an investigation that determined that NWIRP was a likely source of the well field contamination. Hanscom Air Base is also a potential contributor to the groundwater contamination in this area. Approximately 11,000 people rely on drinking water wells located within 4 miles of the site. The Shawsheen River, 7 miles downstream of NWIRP, is a source of drinking water for approximately 12,800 people. Nine residential areas and wetlands are located to the east and northeast of the site. There are extensive wetlands and several species of rare plants and wildlife along the Shawsheen River and the Elm Brook, both located downstream of NWIRP.

Site Responsibility: Federal

NPL LISTING HISTORY	
Proposed Date	06/23/1993
Final Date	05/31/1994

Threats and Contaminants

Hazardous wastes generated at NWIRP include VOCs, photographic fixer, waste oil and coolants, lacquer thinner, unspecified solvents and thinners, Stoddard solvent, waste paint, and chromic, sulfuric, nitric, hydrochloric and phosphoric acids. Iron and VOCs contamination including benzene, trichlorethene, and tetrachlorethene have been detected in three water supply wells operated by the Town of Bedford; these wells have since been closed. There are extensive wetlands and several species of rare plants and wildlife along this river and the Elm Brook, which is also located downstream from NWIRP. Ingesting or coming into contact with contaminated groundwater or wastes could be a health risk.

Cleanup Approach

The site is being addressed in a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status

Entire Site:	In 1986, the Navy initiated a study to determine potential contaminant sources at NWIRP. The study focused on past hazardous substance storage, use and disposal practices at the site. Construction of an Immediate Response Action (IRA) groundwater containment system for Site 3 (TCE Plume) began in the fall of 1995 and began operating in March 1997. The objective of the system is to contain contamination in the groundwater migrating from the northwest area of NWIRP. The system consists of a groundwater extraction system followed by groundwater treatment and discharge. Extraction of groundwater flow is intended to prevent VOCs contamination from potentially migrating north toward Elm Brook. By meeting this objective, the containment system will stop and prevent existing or potential VOCs (mainly TCE) contamination of drinking water or environmentally sensitive areas. The study also identified two disposal and spill sites: the Old Incinerator Ash Disposal Area and the Components Laboratory Fuel Tank Area. Potential contaminants of concern were metals in soils and groundwater near the Ash Disposal Area, total petroleum hydrocarbons (TPH) in soils and metals, and TPH in surface water near the Laboratory Fuel Tank Area. The study concluded that neither of the two areas posed a threat to human health or the environment, and that contaminant migration from them was unlikely. Additional investigations were conducted at NWIRP in 1989 and 1990. These investigations provided further data on soil and groundwater contamination associated with past storage and disposal practices at NWIRP. The investigation initially focused on the Ash Disposal Area and the Laboratory Fuel Tank Area, but also identified additional locations where potential contaminant sources might exist, including underground storage tanks (UST) for fuel and waste, leach fields, dry wells, and waste storage areas. The investigations concluded that additional studies were needed to completely characterize the nature and extent of contamination of the NWIRP. Additional, investigations began in late 1994 and a draft Phase II Remedial Investigation Report was completed in January 1997. As result of this study a BTEX plume was discovered in the vicinity of the transportation building. Further investigation (Supplemental Remedial Investigation) to define the BTEX plume and to define the limits of the TCE source area was completed in October 1998. The Final Phase II Remedial Investigation was completed in September 2000.
TCE Northwest Plume:	The final Feasibility Study was completed October 2001 and a draft Proposed Plan was issued by the Navy proposing insitu source treatment to eliminate or reduce the source, monitored natural attenuation and continued operation of the interim remedy until no longer required to ensure groundwater quality. However,

	due to the challenging site conditions and poor performance of insitu source treatment at other sites, in 2003 the Navy, EPA and MADEP agreed to conduct a removal action consisting of in-situ thermal treatment. In September 2010, a ROD detailing a combined bioremediation, groundwater extraction, and MNA remedy was signed. A Remedial Action Workplan is currently in development. The interim groundwater extraction and treatment system continues to operate. In December of 2011, a pilot test was initiated. The pilot test will determine the ability of substrate to enter the aquifer within the treatment zone. This, in turn, will inform the treatment design.
Old Incinerator Ash Disposal Area,:	A no further action record of decision was signed on September 28, 2000.
Components Laboratory Fuel Oil Tank:	A no further action record of decision was signed on September 28, 2000.
BTEX Plume:	In 2003 the Navy, EPA and MADEP agreed to perform a removal action consisting of in-situ thermal treatment of the plume source area. Based, in part, on the evaluation of groundwater data-gaps additional groundwater modelling and source area characterization were conducted. In September 2009, a Record of Decision (ROD) was finalized outlining a subsurface soil excavation, and Monitored Natural Attenuation (MNA) remedy. The remedy is being implemented.
South Flight Test Area	Groundwater underneath the South Flight Test Area is contaminated with low level VOC's. Groundwater in this area flows toward and is captured by the Hanscom Air Force Base groundwater extraction and treatment system. Since the contaminated groundwater is being treated and the concentrations are relatively low, it was generally agreed that this action was protective and sufficient for now despite never locating a definitive VOC source. To formalize this arrangement, the Navy has entered into a Memorandum of Understanding with the Air Force. This MOU was signed in 2004. A long term monitoring plan has been in operation since 2002.

Environmental Progress

Initial studies indicate that no immediate threats to human health and safety exist at the Naval Weapons Industrial Reserve Plant site. Proposed remedies were formulated by the Navy, but were deferred at the TCE plume for a pilot test and at the BTEX plume due to failure to meet goals. In the interim, the on-site groundwater containment system at the TCE plume will keep contaminants from spreading from the site and the pilot test to inject treatment chemicals into the BTEX plume core reduced concentrations.

Current Site Status

RODs for the TCE and BTEX plume have been deferred for the time being. Currently, both plumes are undergoing insitu thermal treatment. A Memorandum of Understanding between the Navy and the Air Force was signed in 2004 which documents that the chlorinated solvents at the south end of NWIRP Bedford are currently being treated by the adjacent Hanscom Air Force Base groundwater extraction/treatment system and memorializes an agreement to share information. A monitoring plan has been in operation since the fall of 2002.

Site Photos

Newsletters & Press Releases:

Press Releases about this project	http://yosemite.epa.gov/opa/admpress.nsf/Press%20Releases%20from%20Region%201?SearchView&Query=naval%20industrial%20weapons%20reserve%20plant&SearchMax=0&SearchWV=TRUE&SearchOrder=4	☐ Exit EPA ☐ PDF

Federal Register Notices:

Final NPL Listing	http://www.epa.gov/superfund/sites/npl/f940531.htm	☐ Exit EPA ☐ PDF

Reports and Studies:

Proposed Remedial Action Plan (PRAP) Site 3, Chlorinated Solvent Groundwater Plume, July 2010 (3.53 MB)	http://www.epa.gov/region1/superfund/sites/nwirp/466381.pdf	☐ Exit EPA ☒ PDF
Final Five Year Review, September 25, 2014 (16.5 MB)	http://www.epa.gov/region1/superfund/sites/nwirp/564343.pdf	☐ Exit EPA ☒ PDF

Decision Documents:

View Records of Decision (RODS) on-line (EPA HQ)	http://cumulis.epa.gov/superrods/rodslist.cfm?msiteid=0102032	☐ Exit EPA ☐ PDF
Record of Decision (ROD) for Operable Unit 4, Site 4 - BTEX Plume, September 29, 2009 (15.9 MB)	http://www.epa.gov/region1/superfund/sites/nwirp/457352.pdf	☐ Exit EPA ☒ PDF
Record of Decision (ROD) for Operable Unit 1, Site 3 - Chlorinated Solvent Groundwater Plume, September 29, 2010 (4.08 MB)	http://www.epa.gov/region1/superfund/sites/nwirp/469176.pdf	☐ Exit EPA ☒ PDF
Explanation of Significant Differences (ESD) for Operable Unit 1, Site 3 - Chlorinated Solvent Groundwater Plume, March 14, 2014 (2.22 MB)	http://www.epa.gov/region1/superfund/sites/nwirp/557956and557957.pdf	☐ Exit EPA ☒ PDF

Other Links:

NPL Site Narrative at Listing:	http://www.epa.gov/superfund/sites/npl/nar1391.htm	☐ Exit EPA ☐ PDF
Site Progress Profile	http://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0102032	☐ Exit EPA ☐ PDF

Site Repositories

Bedford Public Library, # 7 Mudge Way, Bedford, MA 01730 (617) 275-9440

OSRR Records and Information Center , 1st Floor, 5 Post Office Square , Suite 100 (HSC), Boston, MA 02109-3912 (617) 918-1440

Contacts

EPA Remedial Project Manager:	**Matthew Audet**
Address:	US Environmental Protection Agency 5 Post Office Square, Suite 100 Mail Code: OSRR07-3 Boston, MA 02109-3912
Phone #:	617-918-1449

E-Mail Address:	audet.matthew@epa.gov

EPA Community Involvement Coordinator:	**Pamela Harting-Barrat**
Address:	US Environmental Protection Agency 5 Post Office Square, Suite 100 Mail Code: ORA20-1 Boston, MA 02109-3912
Phone #:	617-918-1318
E-Mail Address:	harting-barrat.pamela@epa.gov

Fact Sheet Maintenance

Email of Reviewer:	* **Ross Gilleland/R1/USEPA/US**
RPM Editor	Phoebe Stinson, USEPA
RPM Editor E-Mail:	Phoebe Stinson/R1/USEPA/US
Date Ready for Review	10/30/2015
Reviewer Name	CN=Phoebe Stinson/OU=R1/O=USEPA/C=US
Date of Release	10/30/2015
Release Comments	
Role of Last Editor	[Reviewer]; [NPL Editor]; [NPL Reviewer]; [SAND Editor]; [SAND Reviewer]; [SHORT Editor]; [SHORT Reviewer]; [BF Editor]; [BF Reviewer]; [RCRA Editor]; [RCRA Reviewer]; [ARCHIV Reviewer]; [ARCHIV Editor]; [Photo Edit]
Date of Last RPM Edit	10/24/2002